

# SEQUENCE LISTING

<110> Soren Weis DAHL et al.  
 <120> TRANSLOCATION DEPENDENT COMPLEMENTATION FOR DRUG SCREENING  
 <130> 4614-0159PUS1  
 <140> US 10/511,468  
 <141> 2004-10-18  
 <160> 99  
 <170> PatentIn version 3.1  
 <210> 1  
 <211> 238  
 <212> PRT  
 <213> Aequorea victoria  
 <400> 1  
 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  
 1 5 10 15  
 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45  
 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60  
 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80  
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg  
 85 90 95  
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  
 100 105 110  
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile  
 115 120 125  
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
 130 135 140  
 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
 145 150 155 160  
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175  
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro

180 185 190  
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
 195 200 205  
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val  
 210 215 220  
 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235  
 <210> 2  
 <211> 238  
 <212> PRT  
 <213> Aequorea victoria  
 <400> 2  
 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  
 1 5 10 15  
 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30  
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45  
 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60  
 Ser Trp Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80  
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg  
 85 90 95  
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  
 100 105 110  
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile  
 115 120 125  
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
 130 135 140  
 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
 145 150 155 160  
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175  
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
 180 185 190  
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
 195 200 205  
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val

210

215

220

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235

&lt;210&gt; 3

&lt;211&gt; 238

&lt;212&gt; PRT

&lt;213&gt; Aequorea victoria

&lt;400&gt; 3

Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  
 1 5 10 15

Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
 20 25 30

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
 35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60

Ser His Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
 65 70 75 80

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg  
 85 90 95

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  
 100 105 110

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile  
 115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
 130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
 145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
 165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
 180 185 190

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
 195 200 205

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val  
 210 215 220

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
 225 230 235

&lt;210&gt; 4

<211> 239  
 <212> PRT  
 <213> Aequorea victoria

<400> 4

Met	Val	Ser	Lys	Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu
1				5					10					15	
Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly
			20					25					30		
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile
		35					40					45			
Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr
	50					55					60				
Leu	Thr	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys
65					70					75					80
Gln	His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu
			85						90					95	
Arg	Thr	Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu
			100					105					110		
Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly
		115					120					125			
Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr
	130					135					140				
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn
145					150					155					160
Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser
			165					170						175	
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly
		180						185					190		
Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu
		195					200					205			
Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe
	210					215					220				
Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	
225					230					235					

<210> 5  
 <211> 239  
 <212> PRT  
 <213> Aequorea victoria

<400> 5

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu

1	5	10	15
Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly	20	25	30
Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile	35	40	45
Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr	50	55	60
Phe Gly Tyr Gly Leu Gln Cys Phe Ala Arg Tyr Pro Asp His Met Lys	65	70	75
Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu	85	90	95
Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu	100	105	110
Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly	115	120	125
Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr	130	135	140
Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn	145	150	155
Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser	165	170	175
Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly	180	185	190
Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu	195	200	205
Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe	210	215	220
Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys	225	230	235

<210> 6  
 <211> 239  
 <212> PRT  
 <213> Aequorea victoria

<400> 6  
 Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu  
 1 5 10 15  
 Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly  
 20 25 30  
 Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile

35

40

45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr  
50 55 60

Leu Gly Tyr Gly Leu Gln Cys Phe Ala Arg Tyr Pro Asp His Met Lys  
65 70 75 80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu  
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu  
100 105 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly  
115 120 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr  
130 135 140

Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn  
145 150 155 160

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser  
165 170 175

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly  
180 185 190

Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu  
195 200 205

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe  
210 215 220

Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys  
225 230 235

<210> 7

<211> 121

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (3)..(116)

<400> 7

cc atg gcc ggt ggt acc ggt tcc ggt gcc ctg aag aag gag ctg cag  
Met Ala Gly Gly Thr Gly Ser Gly Ala Leu Lys Lys Glu Leu Gln  
1 5 10 15

47

gcc aac aag aag gag ctg gcc cag ctg aag tgg gag ctg cag gcc ctg  
Ala Asn Lys Lys Glu Leu Ala Gln Leu Lys Trp Glu Leu Gln Ala Leu  
20 25 30

95

aag aag gag ctg gcc cag tag gatcc  
 Lys Lys Glu Leu Ala Gln  
 35

121

<210> 8  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Met Ala Gly Gly Thr Gly Ser Gly Ala Leu Lys Lys Glu Leu Gln Ala  
 1 5 10 15

Asn Lys Lys Glu Leu Ala Gln Leu Lys Trp Glu Leu Gln Ala Leu Lys  
 20 25 30

Lys Glu Leu Ala Gln  
 35

<210> 9  
 <211> 121  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (3)..(116)

<400> 9  
 cc atg gcc agc gag cag ctg gag aag aag ctg cag gcc ctg gag aag  
 Met Ala Ser Glu Gln Leu Glu Lys Lys Leu Gln Ala Leu Glu Lys  
 1 5 10 15 47

aag ctg gcc cag ctg gag tgg aag aac cag gcc ctg gag aag aag ctg  
 Lys Leu Ala Gln Leu Glu Trp Lys Asn Gln Ala Leu Glu Lys Lys Leu  
 20 25 30 95

gcc cag ggc ggc acc ggt tag gatcc  
 Ala Gln Gly Gly Thr Gly  
 35 121

<210> 10  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 10  
 Met Ala Ser Glu Gln Leu Glu Lys Lys Leu Gln Ala Leu Glu Lys Lys  
 1 5 10 15

Leu Ala Gln Leu Glu Trp Lys Asn Gln Ala Leu Glu Lys Lys Leu Ala  
 20 25 30

Gln Gly Gly Thr Gly  
 35

<210> 11  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 11  
Gly Ser Gly Ser Gly Ser Gly Asp Ile Thr Ser Leu Tyr Lys Lys Ala  
1 5 10 15

Gly Ser Thr

<210> 12  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 12  
Gly Ser Gly Ser Gly Ser Gly Asp Ile Thr Ser Leu Tyr Lys Lys Ala  
1 5 10 15

Gly Ser Thr

<210> 13  
<211> 18  
<212> PRT  
<213> Homo sapiens

<400> 13  
Asp Pro Ala Phe Leu Tyr Lys Val Val Ile Ser Gly Ser Gly Ser Gly  
1 5 10 15

Ser Gly

<210> 14  
<211> 18  
<212> PRT  
<213> Homo sapiens

<400> 14  
Asp Pro Ala Phe Leu Tyr Lys Val Val Ile Ser Gly Ser Gly Ser Gly  
1 5 10 15

Ser Gly

<210> 15  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 15



cctactgctt tgagattcgt cgg

23

<210> 16

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 16

gtcattccag ttttagaagc tc

22

<210> 17

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 17

cagacaatct gtgtgggcac tcgaccgg

28

<210> 18

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 18

catggccggt ggtaccggtt ccggtgccct gaagaaggag ctgcagg

47

<210> 19

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 19

agctccttct tcagggcacc ggaaccggtta ccaccggc

38

<210> 20

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 20

ccaacaagaa ggagctggcc cagctgaagt gggagctgca g 41

<210> 21  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 21  
ctcccacttc agctgggcca gtccttctt gttggcctgc 40

<210> 22  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 22  
gccctgaaga aggagctggc ccagtag 27

<210> 23  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 23  
gatcctactg ggccagctcc ttcttcaggg cctgcag 37

<210> 24  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 24  
catggccagc gagcagctgg agaagaagct gcaggccctg 40

<210> 25  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 25  
 cctgcagctt cttctccagc tgctcgctgg c 31

<210> 26  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence

<400> 26  
 gagaagaagc tggcccagct ggagtggaag aaccaggccc tggag 45

<210> 27  
 <211> 44  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence

<400> 27  
 ggcttggttc ttccactcca gctgggccag cttcttctcc aggg 44

<210> 28  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence

<400> 28  
 aagaagctgg cccagggcgg caccggttag 30

<210> 29  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence

<400> 29  
 gatcctaacc ggtgccgcc tgggccagct tcttctccag 40

<210> 30  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 30  
 ggcgccatgg tgagcaaggg cgag 24  
  
 <210> 31  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 31  
 gccggaccgg taccaccgtt gtactccagc ttgtg 35  
  
 <210> 32  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 32  
 gccggaccgg taccaccctg cttgtcggcc atg 33  
  
 <210> 33  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 33  
 gccggaccgg taccaccctc gatgttgtgg cggatc 36  
  
 <210> 34  
 <211> 32  
 <212> DNA  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 34  
 ccccgatcc tacttgtaca gtcgtccat gc 32  
  
 <210> 35  
 <211> 36  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 35

ggcgccatgg gcaccgggta caacagccac aacgtc

36

<210> 36

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 36

ggcgccatgg gcaccggtaa gaacggcatc aaggtg

36

<210> 37

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 37

ggcgccatgg gcaccgggtga cggcagcgtg cagctc

36

<210> 38

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 38

gggggctagc gccacccatgg tgagcaaggg cgag

34

<210> 39

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 39

gcgggggatc cgatatcgcc agagccagag ccagagccct cgatgttg gcggatc

57

<210> 40  
 <211> 56  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 40  
 gggggctagc gatatccggc tctggctctg gctctggcga cggcagcgtg cagctc 56  
  
 <210> 41  
 <211> 64  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 41  
 gccaccctc gtgaccacct tcggctacgg cctgcagtgc ttgcccgt accccgacca 60  
 catg 64  
  
 <210> 42  
 <211> 64  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 42  
 catgtggtcg gggtagcggg cgaagcactg caggccgtag ccgaaggtgg tcacgagggt 60  
 gggc 64  
  
 <210> 43  
 <211> 64  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 43  
 gccaccctc gtgaccaccc tgggctacgg cctgcagtgc ttgcccgt accccgacca 60  
 catg 64  
  
 <210> 44  
 <211> 64  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>

<223> Synthetic oligonucleotide primer sequence

<400> 44

catgtggtcg gggtagcggg cgaagcactg caggccgtag cccagggtgg tcacgagggt 60  
gggc 64

<210> 45

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 45

gacaaccact acctgagcta ccagtccgcc ctgagc 36

<210> 46

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 46

gctcagggcg gactggtagc tcaggtagtg gttgtc 36

<210> 47

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 47

ccaccatggg agtgcaggtg gaaacc 26

<210> 48

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer sequence

<400> 48

cttccagttt tagaagctc 19

<210> 49

<211> 29  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 49  
 ccaccatgga gatgtggcat gaaggcctg 29  
  
 <210> 50  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 50  
 cctgctttga gattcgtcgg aacac 25  
  
 <210> 51  
 <211> 74  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 51  
 tcctaggtca gtcctgctcc tcggccacga agtgcactcc taggctgcag cacgtgttga 60  
 caattaatca tcgg 74  
  
 <210> 52  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 52  
 cagacaatct gtgtgggcac tcgaccgg 28  
  
 <210> 53  
 <211> 59  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 53



gcgggggatc cgatatcgcc agagccagag ccagagccct gggccagctc cttcttcag 59

<210> 54  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 54  
cctacttgga gctggtgtac ttggtgac 28

<210> 55  
<211> 56  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 55  
gggggctagc gatatccggc tctggctctg gctctggcga cggcagcgtg cagctc 56

<210> 56  
<211> 29  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 56  
ccaccatggc tactcaagct gatttgatg 29

<210> 57  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 57  
ccaggtcagt atcaaaccag gccag 25

<210> 58  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 58  
 cctacaggtc agtatcaaac caggccag 28  
  
 <210> 59  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 59  
 gttgctagca ccatgcctga gccagccaag tctgct 36  
  
 <210> 60  
 <211> 34  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 60  
 gttgatatcc cttggagctg gtgtacttgg tgac 34  
  
 <210> 61  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 61  
 ccaccatgcc gcagctgaac ggcggtgga 29  
  
 <210> 62  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 62  
 caggcggagg ccgtctttcc gc 22  
  
 <210> 63  
 <211> 36

<212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 63  
 gttcagctga tgggagtgcg ggtggaaacc atctcc 36  
  
 <210> 64  
 <211> 60  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 64  
 gttggatccg atatcaccgg tgcctgtccc agttccttcc agtttttagaa gctccacatc 60  
  
 <210> 65  
 <211> 62  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 65  
 gttgctagcg atatccggaa cgggcactgg gaccggtgag atgtggcatg aaggcctgga 60  
 ag 62  
  
 <210> 66  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 66  
 gttcccggga gctgctttga gattcgtcgg aacac 35  
  
 <210> 67  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide primer sequence  
  
 <400> 67  
 ccaccatgcc tgagccagcc aagtctgct 29

<210> 68  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide primer sequence

<400> 68  
ccttgagct ggtgtacttg gtagac

25

<210> 69  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 69  
Asp Pro Ala Phe Leu Tyr Lys Val Val Ile Ser Gly Ser Gly Ser Gly  
1 5 10 15

Ser Gly

<210> 70  
<211> 19  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 70  
Gly Ser Gly Ser Gly Ser Gly Asp Ile Thr Ser Leu Tyr Lys Lys Ala  
1 5 10 15

Gly Ser Thr

<210> 71  
<211> 16  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 71  
Asp Pro Ala Phe Leu Tyr Lys Val Val Ile Ser Gly Ser Gly Ser Gly  
1 5 10 15

<210> 72  
<211> 9

<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 72  
Gly Ser Gly Ser Gly Ser Gly Asp Leu  
1 5

<210> 73  
<211> 18  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 73  
Asp Pro Ala Phe Leu Tyr Lys Val Val Ile Ser Gly Thr Gly Thr Gly  
1 5 10 15

Thr Gly

<210> 74  
<211> 19  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 74  
Gly Ser Gly Ser Gly Ser Gly Asp Ile Thr Ser Leu Tyr Lys Lys Ala  
1 5 10 15

Gly Ser Thr

<210> 75  
<211> 12  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 75  
Asp Ile Thr Ser Leu Tyr Lys Lys Ala Gly Ser Thr  
1 5 10

<210> 76  
<211> 19  
<212> PRT  
<213> Artificial sequence

<220>  
 <223> Synthetic peptide linker sequence  
  
 <400> 76  
 Gly Thr Gly Thr Gly Thr Gly Asp Ile Thr Ser Leu Tyr Lys Lys Ala  
 1 5 10 15  
  
 Gly Ser Thr  
  
 <210> 77  
 <211> 10  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic peptide linker sequence  
  
 <400> 77  
 Leu Pro Ser Gly Ser Gly Ser Gly Ser Gly  
 1 5 10  
  
  
 <210> 78  
 <211> 9  
 <212> PRT  
 <213> Aequorea victoria  
  
 <400> 78  
  
 Leu Thr Tyr Gly Val Gln Cys Phe Ser  
 1 5  
  
  
 <210> 79  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> synthetically mutated peptide L64F:T65G:V68L:S72A  
  
 <400> 79  
  
 Phe Gly Tyr Gly Leu Gln Cys Phe Ala  
 1 5  
  
  
 <210> 80  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> synthetically mutated peptide T65G:V68L:S72A  
  
 <400> 80

Leu Gly Tyr Gly Leu Gln Cys Phe Ala  
1 5

<210> 81  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 81

Gly Ser Gly Ser Gly Ser Gly  
1 5

<210> 82  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 82

Gly Gly Thr Gly Ser Gly  
1 5

<210> 83  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide linker sequence

<400> 83

Gly Thr Gly Thr Gly Thr Gly  
1 5

<210> 84  
<211> 238  
<212> PRT  
<213> Aequorea Victoria

<400> 84

Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  
1 5 10 15

Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  
20 25 30

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  
35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
50 55 60

Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln  
65 70 75 80

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg  
85 90 95

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  
100 105 110

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile  
115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  
165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  
180 185 190

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser  
195 200 205

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val  
210 215 220

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys  
225 230 235

<210> 85



<211> 238  
 <212> PRT  
 <213> Renilla muelleri

<400> 85

Met Ser Lys Gln Ile Leu Lys Asn Thr Cys Leu Gln Glu Val Met Ser  
 1 5 10 15

Tyr Lys Val Asn Leu Glu Gly Ile Val Asn Asn His Val Phe Thr Met  
 20 25 30

Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val Gln  
 35 40 45

Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Val  
 50 55 60

Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Asn  
 65 70 75 80

Asp Ile Ser Asp Tyr Phe Ile Gln Ser Phe Pro Ala Gly Phe Met Tyr  
 85 90 95

Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser  
 100 105 110

Asp Ile Asn Leu Ile Glu Asp Lys Phe Val Tyr Arg Val Glu Tyr Lys  
 115 120 125

Gly Ser Asn Phe Pro Asp Asp Gly Pro Val Met Gln Lys Thr Ile Leu  
 130 135 140

Gly Ile Glu Pro Ser Phe Glu Ala Met Tyr Met Asn Asn Gly Val Leu  
 145 150 155 160

Val Gly Glu Val Ile Leu Val Tyr Lys Leu Asn Ser Gly Lys Tyr Tyr  
 165 170 175

Ser Cys His Met Lys Thr Leu Met Lys Ser Lys Gly Val Val Lys Glu  
 180 185 190

Phe Pro Ser Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val  
 195 200 205

Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Met  
 210 215 220

Thr Ser Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val  
 225 230 235

<210> 86  
 <211> 233  
 <212> PRT  
 <213> Renilla reniformis

<400> 86

Met Asp Leu Ala Lys Leu Gly Leu Lys Glu Val Met Pro Thr Lys Ile  
 1 5 10 15

Asn Leu Glu Gly Leu Val Gly Asp His Ala Phe Ser Met Glu Gly Val  
 20 25 30

Gly Glu Gly Asn Ile Leu Glu Gly Thr Gln Glu Val Lys Ile Ser Val  
 35 40 45

Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Val Ser Val Ala  
 50 55 60

Phe Ser Tyr Gly Asn Arg Ala Tyr Thr Gly Tyr Pro Glu Glu Ile Ser  
 65 70 75 80

Asp Tyr Phe Leu Gln Ser Phe Pro Glu Gly Phe Thr Tyr Glu Arg Asn  
 85 90 95

Ile Arg Tyr Gln Asp Gly Gly Thr Ala Ile Val Lys Ser Asp Ile Ser  
 100 105 110

Leu Glu Asp Gly Lys Phe Ile Val Asn Val Asp Phe Lys Ala Lys Asp  
 115 120 125

Leu Arg Arg Met Gly Pro Val Met Gln Gln Asp Ile Val Gly Met Gln  
 130 135 140

Pro Ser Tyr Glu Ser Met Tyr Thr Asn Val Thr Ser Val Ile Gly Glu  
 145 150 155 160

Cys Ile Ile Ala Phe Lys Leu Gln Thr Gly Lys His Phe Thr Tyr His

165

170

175

Met Arg Thr Val Tyr Lys Ser Lys Lys Pro Val Glu Thr Met Pro Leu  
180 185 190

Tyr His Phe Ile Gln His Arg Leu Val Lys Thr Asn Val Asp Thr Ala  
195 200 205

Ser Gly Tyr Val Val Gln His Glu Thr Ala Ile Ala Ala His Ser Thr  
210 215 220

Ile Lys Lys Ile Glu Gly Ser Leu Pro  
225 230

<210> 87  
<211> 225  
<212> PRT  
<213> Discosoma sp.

<400> 87

Met Arg Ser Ser Lys Asn Val Ile Lys Glu Phe Met Arg Phe Lys Val  
1 5 10 15

Arg Met Glu Gly Thr Val Asn Gly His Glu Phe Glu Ile Glu Gly Glu  
20 25 30

Gly Glu Gly Arg Pro Tyr Glu Gly His Asn Thr Val Lys Leu Lys Val  
35 40 45

Thr Lys Gly Gly Pro Leu Pro Phe Ala Trp Asp Ile Leu Ser Pro Gln  
50 55 60

Phe Gln Tyr Gly Ser Lys Val Tyr Val Lys His Pro Ala Asp Ile Pro  
65 70 75 80

Asp Tyr Lys Lys Leu Ser Phe Pro Glu Gly Phe Lys Trp Glu Arg Val  
85 90 95

Met Asn Phe Glu Asp Gly Gly Val Val Thr Val Thr Gln Asp Ser Ser  
100 105 110

Leu Gln Asp Gly Cys Phe Ile Tyr Lys Val Lys Phe Ile Gly Val Asn  
115 120 125

Phe Pro Ser Asp Gly Pro Val Met Gln Lys Lys Thr Met Gly Trp Glu  
 130 135 140

Ala Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Lys Gly Glu  
 145 150 155 160

Ile His Lys Ala Leu Lys Leu Lys Asp Gly Gly His Tyr Leu Val Glu  
 165 170 175

Phe Lys Ser Ile Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Tyr  
 180 185 190

Tyr Tyr Val Asp Ser Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr  
 195 200 205

Thr Ile Val Glu Gln Tyr Glu Arg Thr Glu Gly Arg His His Leu Phe  
 210 215 220

Leu  
 225

<210> 88  
 <211> 148  
 <212> PRT  
 <213> Anemonia sulcata

<400> 88

Met Ala Ser Phe Leu Lys Lys Thr Met Pro Phe Lys Thr Thr Ile Glu  
 1 5 10 15

Gly Thr Val Asn Gly His Tyr Phe Lys Cys Thr Gly Lys Gly Glu Gly  
 20 25 30

Asn Pro Phe Glu Gly Thr Gln Glu Met Lys Ile Glu Val Ile Glu Gly  
 35 40 45

Gly Pro Leu Pro Phe Ala Phe His Ile Leu Ser Thr Ser Cys Met Tyr  
 50 55 60

Gly Ser Lys Thr Phe Ile Lys Tyr Val Ser Gly Ile Pro Asp Tyr Phe  
 65 70 75 80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Thr Tyr

85

90

95

Glu Asp Gly Gly Phe Leu Thr Ala His Gln Asp Thr Ser Leu Asp Gly  
 100 105 110

Asp Cys Leu Val Tyr Lys Val Lys Ile Leu Gly Asn Asn Phe Pro Ala  
 115 120 125

Asp Gly Pro Arg Asp Ala Glu Gln Ser Arg Lys Met Gly Ala Ser His  
 130 135 140

Arg Asp Thr Leu  
 145

<210> 89  
 <211> 231  
 <212> PRT  
 <213> Zoanthus sp.

<400> 89

Met Ala Gln Ser Lys His Gly Leu Thr Lys Glu Met Thr Met Lys Tyr  
 1 5 10 15

Arg Met Glu Gly Cys Val Asp Gly His Lys Phe Val Ile Thr Gly Glu  
 20 25 30

Gly Ile Gly Tyr Pro Phe Lys Gly Lys Gln Ala Ile Asn Leu Cys Val  
 35 40 45

Val Glu Gly Gly Pro Leu Pro Phe Ala Glu Asp Ile Leu Ser Ala Ala  
 50 55 60

Phe Asn Tyr Gly Asn Arg Val Phe Thr Glu Tyr Pro Gln Asp Ile Val  
 65 70 75 80

Asp Tyr Phe Lys Asn Ser Cys Pro Ala Gly Tyr Thr Trp Asp Arg Ser  
 85 90 95

Phe Leu Phe Glu Asp Gly Ala Val Cys Ile Cys Asn Ala Asp Ile Thr  
 100 105 110

Val Ser Val Glu Glu Asn Cys Met Tyr His Glu Ser Lys Phe Tyr Gly  
 115 120 125

Val Asn Phe Pro Ala Asp Gly Pro Val Met Lys Lys Met Thr Asp Asn  
 130 135 140

Trp Glu Pro Ser Cys Glu Lys Ile Ile Pro Val Pro Lys Gln Gly Ile  
 145 150 155 160

Leu Lys Gly Asp Val Ser Met Tyr Leu Leu Leu Lys Asp Gly Gly Arg  
 165 170 175

Leu Arg Cys Gln Phe Asp Thr Val Tyr Lys Ala Lys Ser Val Pro Arg  
 180 185 190

Lys Met Pro Asp Trp His Phe Ile Gln His Lys Leu Thr Arg Glu Asp  
 195 200 205

Arg Ser Asp Ala Lys Asn Gln Lys Trp His Leu Thr Glu His Ala Ile  
 210 215 220

Ala Ser Gly Ser Ala Leu Pro  
 225 230

<210> 90  
 <211> 232  
 <212> PRT  
 <213> Anemonia sulcata

<400> 90

Met Ala Ser Phe Leu Lys Lys Thr Met Pro Phe Lys Thr Thr Ile Glu  
 1 5 10 15

Gly Thr Val Asn Gly His Tyr Phe Lys Cys Thr Gly Lys Gly Glu Gly  
 20 25 30

Asn Pro Phe Glu Gly Thr Gln Glu Met Lys Ile Glu Val Ile Glu Gly  
 35 40 45

Gly Pro Leu Pro Phe Ala Phe His Ile Leu Ser Thr Ser Cys Met Tyr  
 50 55 60

Gly Ser Lys Thr Phe Ile Lys Tyr Val Ser Gly Ile Pro Asp Tyr Phe  
 65 70 75 80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Thr Tyr

85

90

95

Glu Asp Gly Gly Phe Leu Thr Ala His Gln Asp Thr Ser Leu Asp Gly  
 100 105 110

Asp Cys Leu Val Tyr Lys Val Lys Ile Leu Gly Asn Asn Phe Pro Ala  
 115 120 125

Asp Gly Pro Val Met Gln Asn Lys Ala Gly Arg Trp Glu Pro Ala Thr  
 130 135 140

Glu Ile Val Tyr Glu Val Asp Gly Val Leu Arg Gly Gln Ser Leu Met  
 145 150 155 160

Ala Leu Lys Cys Pro Gly Gly Arg His Leu Thr Cys His Leu His Thr  
 165 170 175

Thr Tyr Arg Ser Lys Lys Pro Ala Ser Ala Leu Lys Met Pro Gly Phe  
 180 185 190

His Phe Glu Asp His Arg Ile Glu Ile Met Glu Glu Val Glu Lys Gly  
 195 200 205

Lys Cys Tyr Lys Gln Tyr Glu Ala Ala Val Gly Arg Tyr Cys Asp Ala  
 210 215 220

Ala Pro Ser Lys Leu Gly His Asn  
 225 230

<210> 91  
 <211> 228  
 <212> PRT  
 <213> Anemonia sulcata

<400> 91

Met Tyr Pro Ser Ile Lys Glu Thr Met Arg Val Gln Leu Ser Met Glu  
 1 5 10 15

Gly Ser Val Asn Tyr His Ala Phe Lys Cys Thr Gly Lys Gly Glu Gly  
 20 25 30

Lys Pro Tyr Glu Gly Thr Gln Ser Leu Asn Ile Thr Ile Thr Glu Gly  
 35 40 45

Gly Pro Leu Pro Phe Ala Phe Asp Ile Leu Ser His Ala Phe Gln Tyr  
 50 55 60

Gly Ile Lys Val Phe Ala Lys Tyr Pro Lys Glu Ile Pro Asp Phe Phe  
 65 70 75 80

Lys Gln Ser Leu Pro Gly Gly Phe Ser Trp Glu Arg Val Ser Thr Tyr  
 85 90 95

Glu Asp Gly Gly Val Leu Ser Ala Thr Gln Glu Thr Ser Leu Gln Gly  
 100 105 110

Asp Cys Ile Ile Cys Lys Val Lys Val Leu Gly Thr Asn Phe Pro Ala  
 115 120 125

Asn Gly Pro Val Met Gln Lys Lys Thr Cys Gly Trp Glu Pro Ser Thr  
 130 135 140

Glu Thr Val Ile Pro Arg Asp Gly Gly Leu Leu Leu Arg Asp Thr Pro  
 145 150 155 160

Ala Leu Met Leu Ala Asp Gly Gly His Leu Ser Cys Phe Met Glu Thr  
 165 170 175

Thr Tyr Lys Ser Lys Lys Glu Val Lys Leu Pro Glu Leu His Phe His  
 180 185 190

His Leu Arg Met Glu Lys Leu Asn Ile Ser Asp Asp Trp Lys Thr Val  
 195 200 205

Glu Gln His Glu Ser Val Val Ala Ser Tyr Ser Gln Val Pro Ser Lys  
 210 215 220

Leu Gly His Asn  
 225

<210> 92  
 <211> 225  
 <212> PRT  
 <213> Montastraea cavernosa

<400> 92

Met Ser Val Ile Lys Pro Ile Met Glu Ile Lys Leu Arg Met Gln Gly



1		5						10					15				
Val	Val	Asn	Gly	His	Lys	Phe	Val	Ile	Lys	Gly	Glu	Gly	Glu	Gly	Lys		
		20						25					30				
Pro	Phe	Glu	Gly	Thr	Gln	Thr	Ile	Asn	Leu	Thr	Val	Lys	Glu	Gly	Ala		
		35					40					45					
Pro	Leu	Pro	Phe	Ala	Tyr	Asp	Ile	Leu	Thr	Ser	Ala	Phe	Gln	Tyr	Gly		
	50					55					60						
Asn	Arg	Val	Phe	Thr	Lys	Tyr	Pro	Asp	Asp	Ile	Pro	Asp	Tyr	Phe	Lys		
65					70					75					80		
Gln	Thr	Phe	Pro	Glu	Gly	Tyr	Ser	Trp	Glu	Arg	Ile	Met	Ala	Tyr	Glu		
				85					90					95			
Asp	Gln	Ser	Ile	Cys	Thr	Ala	Thr	Ser	Asp	Ile	Lys	Met	Glu	Gly	Asp		
			100					105					110				
Cys	Phe	Ile	Tyr	Glu	Ile	Gln	Phe	His	Gly	Val	Asn	Phe	Pro	Pro	Asn		
		115					120					125					
Gly	Pro	Val	Met	Gln	Lys	Lys	Thr	Leu	Lys	Trp	Glu	Pro	Ser	Thr	Glu		
	130					135					140						
Lys	Met	Tyr	Val	Arg	Asp	Gly	Val	Leu	Lys	Gly	Asp	Val	Asn	Met	Ala		
145					150					155					160		
Leu	Leu	Leu	Glu	Gly	Gly	Gly	His	Tyr	Arg	Cys	Asp	Phe	Arg	Ser	Thr		
				165					170					175			
Tyr	Lys	Ala	Lys	Lys	Arg	Val	Gln	Leu	Pro	Asp	Tyr	His	Phe	Val	Asp		
			180					185					190				
His	Arg	Ile	Glu	Ile	Leu	Ser	His	Asp	Asn	Asp	Tyr	Asn	Thr	Val	Lys		
		195					200					205					
Leu	Ser	Glu	Asp	Ala	Glu	Ala	Arg	Tyr	Ser	Met	Leu	Pro	Ser	Gln	Ala		
	210					215					220						
Lys																	
225																	

<210> 93  
 <211> 227  
 <212> PRT  
 <213> Montastraea faveolata

<400> 93

Met Ser Val Ile Lys Pro Asp Met Lys Ile Lys Leu Arg Met Glu Gly  
 1 5 10 15

Ala Val Asn Gly His Lys Phe Val Ile Glu Gly Asp Gly Lys Gly Lys  
 20 25 30

Pro Phe Glu Gly Thr Gln Ser Met Asp Leu Thr Val Lys Glu Gly Ala  
 35 40 45

Pro Leu Pro Phe Ala Tyr Asp Ile Leu Thr Thr Val Phe Asp Tyr Gly  
 50 55 60

Asn Arg Val Phe Ala Lys Tyr Pro Gln Asp Ile Pro Asp Tyr Phe Lys  
 65 70 75 80

Gln Thr Phe Pro Glu Gly Tyr Ser Trp Glu Arg Ser Met Thr Tyr Glu  
 85 90 95

Asp Gln Gly Ile Cys Val Ala Thr Asn Asp Ile Thr Leu Met Lys Gly  
 100 105 110

Val Asp Asp Cys Phe Val Tyr Lys Ile Arg Phe Asp Gly Val Asn Phe  
 115 120 125

Pro Ala Asn Gly Pro Val Met Gln Lys Lys Thr Leu Lys Trp Glu Pro  
 130 135 140

Ser Thr Glu Lys Met Tyr Val Arg Asp Gly Val Leu Lys Gly Asp Val  
 145 150 155 160

Asn Met Ala Leu Leu Leu Glu Gly Gly Gly His Tyr Arg Cys Asp Phe  
 165 170 175

Lys Thr Thr Tyr Lys Ala Lys Lys Phe Val Gln Leu Pro Asp Tyr His  
 180 185 190

Phe Val Asp His Arg Ile Glu Ile Leu Ser His Asp Lys Asp Tyr Asn  
 195 200 205

Lys Val Lys Leu Tyr Glu His Ala Glu Ala His Ser Gly Leu Pro Arg  
 210 215 220

Gln Ala Lys  
 225

<210> 94  
 <211> 266  
 <212> PRT  
 <213> Clavularia sp.

<400> 94

Met Lys Cys Lys Phe Val Phe Cys Leu Ser Phe Leu Val Leu Ala Ile  
 1 5 10 15

Thr Asn Ala Asn Ile Phe Leu Arg Asn Glu Ala Asp Leu Glu Glu Lys  
 20 25 30

Thr Leu Arg Ile Pro Lys Ala Leu Thr Thr Met Gly Val Ile Lys Pro  
 35 40 45

Asp Met Lys Ile Lys Leu Lys Met Glu Gly Asn Val Asn Gly His Ala  
 50 55 60

Phe Val Ile Glu Gly Glu Gly Glu Gly Lys Pro Tyr Asp Gly Thr His  
 65 70 75 80

Thr Leu Asn Leu Glu Val Lys Glu Gly Ala Pro Leu Pro Phe Ser Tyr  
 85 90 95

Asp Ile Leu Ser Asn Ala Phe Gln Tyr Gly Asn Arg Ala Leu Thr Lys  
 100 105 110

Tyr Pro Asp Asp Ile Ala Asp Tyr Phe Lys Gln Ser Phe Pro Glu Gly  
 115 120 125

Tyr Ser Trp Glu Arg Thr Met Thr Phe Glu Asp Lys Gly Ile Val Lys  
 130 135 140

Val Lys Ser Asp Ile Ser Met Glu Glu Asp Ser Phe Ile Tyr Glu Ile  
 145 150 155 160

Arg Phe Asp Gly Met Asn Phe Pro Pro Asn Gly Pro Val Met Gln Lys  
 165 170 175

Lys Thr Leu Lys Trp Glu Pro Ser Thr Glu Ile Met Tyr Val Arg Asp  
 180 185 190

Gly Val Leu Val Gly Asp Ile Ser His Ser Leu Leu Leu Glu Gly Gly  
 195 200 205

Gly His Tyr Arg Cys Asp Phe Lys Ser Ile Tyr Lys Ala Lys Lys Val  
 210 215 220

Val Lys Leu Pro Asp Tyr His Phe Val Asp His Arg Ile Glu Ile Leu  
 225 230 235 240

Asn His Asp Lys Asp Tyr Asn Lys Val Thr Leu Tyr Glu Asn Ala Val  
 245 250 255

Ala Arg Tyr Ser Leu Leu Pro Ser Gln Ala  
 260 265

<210> 95  
 <211> 232  
 <212> PRT  
 <213> Discosoma striata

<400> 95

Met Ser Cys Ser Lys Ser Val Ile Lys Glu Glu Met Leu Ile Asp Leu  
 1 5 10 15

His Leu Glu Gly Thr Phe Asn Gly His Tyr Phe Glu Ile Lys Gly Lys  
 20 25 30

Gly Lys Gly Gln Pro Asn Glu Gly Thr Asn Thr Val Thr Leu Glu Val  
 35 40 45

Thr Lys Gly Gly Pro Leu Pro Phe Gly Trp His Ile Leu Cys Pro Gln  
 50 55 60

Phe Gln Tyr Gly Asn Lys Ala Phe Val His His Pro Asp Asn Ile His  
 65 70 75 80

Asp Tyr Leu Lys Leu Ser Phe Pro Glu Gly Tyr Thr Trp Glu Arg Ser  
85 90 95

Met His Phe Glu Asp Gly Gly Leu Cys Cys Ile Thr Asn Asp Ile Ser  
100 105 110

Leu Thr Gly Asn Cys Phe Tyr Tyr Asp Ile Lys Phe Thr Gly Leu Asn  
115 120 125

Phe Pro Pro Asn Gly Pro Val Val Gln Lys Lys Thr Thr Gly Trp Glu  
130 135 140

Pro Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Ile Gly Asp  
145 150 155 160

Ile His His Ala Leu Thr Val Glu Gly Gly Gly His Tyr Ala Cys Asp  
165 170 175

Ile Lys Thr Val Tyr Arg Ala Lys Lys Ala Ala Leu Lys Met Pro Gly  
180 185 190

Tyr His Tyr Val Asp Thr Lys Leu Val Ile Trp Asn Asn Asp Lys Glu  
195 200 205

Phe Met Lys Val Glu Glu His Glu Ile Ala Val Ala Arg His His Pro  
210 215 220

Phe Tyr Glu Pro Lys Lys Asp Lys  
225 230

<210> 96  
<211> 238  
<212> PRT  
<213> Ptilosarcus sp.

<400> 96

Met Asn Arg Asn Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met Ser  
1 5 10 15

Ala Lys Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser Met  
20 25 30

Glu Gly Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met Gln  
35 40 45

Ile Arg Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile Val  
50 55 60

Ser Ile Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Asp  
65 70 75 80

Asp Ile Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe Tyr  
85 90 95

Glu Arg Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg Ser  
100 105 110

Asp Ile Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr Arg  
115 120 125

Gly Asn Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile Leu  
130 135 140

Gly Met Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val Leu  
145 150 155 160

Val Gly Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr Tyr  
165 170 175

Ser Cys His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys Glu  
180 185 190

Phe Pro Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr Val  
195 200 205

Glu Glu Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Leu  
210 215 220

Thr Thr Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val  
225 230 235

<210> 97  
<211> 231  
<212> PRT  
<213> Zoanthus sp.

<400> 97

Met Ala His Ser Lys His Gly Leu Lys Glu Glu Met Thr Met Lys Tyr  
 1 5 10 15  
 His Met Glu Gly Cys Val Asn Gly His Lys Phe Val Ile Thr Gly Glu  
 20 25 30  
 Gly Ile Gly Tyr Pro Phe Lys Gly Lys Gln Thr Ile Asn Leu Cys Val  
 35 40 45  
 Ile Glu Gly Gly Pro Leu Pro Phe Ser Glu Asp Ile Leu Ser Ala Gly  
 50 55 60  
 Phe Lys Tyr Gly Asp Arg Ile Phe Thr Glu Tyr Pro Gln Asp Ile Val  
 65 70 75 80  
 Asp Tyr Phe Lys Asn Ser Cys Pro Ala Gly Tyr Thr Trp Gly Arg Ser  
 85 90 95  
 Phe Leu Phe Glu Asp Gly Ala Val Cys Ile Cys Asn Val Asp Ile Thr  
 100 105 110  
 Val Ser Val Lys Glu Asn Cys Ile Tyr His Lys Ser Ile Phe Asn Gly  
 115 120 125  
 Met Asn Phe Pro Ala Asp Gly Pro Val Met Lys Lys Met Thr Thr Asn  
 130 135 140  
 Trp Glu Ala Ser Cys Glu Lys Ile Met Pro Val Pro Lys Gln Gly Ile  
 145 150 155 160  
 Leu Lys Gly Asp Val Ser Met Tyr Leu Leu Leu Lys Asp Gly Gly Arg  
 165 170 175  
 Tyr Arg Cys Gln Phe Asp Thr Val Tyr Lys Ala Lys Ser Val Pro Ser  
 180 185 190  
 Lys Met Pro Glu Trp His Phe Ile Gln His Lys Leu Leu Arg Glu Asp  
 195 200 205  
 Arg Ser Asp Ala Lys Asn Gln Lys Trp Gln Leu Thr Glu His Ala Ile  
 210 215 220  
 Ala Phe Pro Ser Ala Leu Ala

225

230

<210> 98  
 <211> 229  
 <212> PRT  
 <213> Anemonia majano

<400> 98

Met Ala Leu Ser Asn Lys Phe Ile Gly Asp Asp Met Lys Met Thr Tyr  
 1 5 10 15

His Met Asp Gly Cys Val Asn Gly His Tyr Phe Thr Val Lys Gly Glu  
 20 25 30

Gly Asn Gly Lys Pro Tyr Glu Gly Thr Gln Thr Ser Thr Phe Lys Val  
 35 40 45

Thr Met Ala Asn Gly Gly Pro Leu Ala Phe Ser Phe Asp Ile Leu Ser  
 50 55 60

Thr Val Phe Lys Tyr Gly Asn Arg Cys Phe Thr Ala Tyr Pro Thr Ser  
 65 70 75 80

Met Pro Asp Tyr Phe Lys Gln Ala Phe Pro Asp Gly Met Ser Tyr Glu  
 85 90 95

Arg Thr Phe Thr Tyr Glu Asp Gly Gly Val Ala Thr Ala Ser Trp Glu  
 100 105 110

Ile Ser Leu Lys Gly Asn Cys Phe Glu His Lys Ser Thr Phe His Gly  
 115 120 125

Val Asn Phe Pro Ala Asp Gly Pro Val Met Ala Lys Lys Thr Thr Gly  
 130 135 140

Trp Asp Pro Ser Phe Glu Lys Met Thr Val Cys Asp Gly Ile Leu Lys  
 145 150 155 160

Gly Asp Val Thr Ala Phe Leu Met Leu Gln Gly Gly Gly Asn Tyr Arg  
 165 170 175

Cys Gln Phe His Thr Ser Tyr Lys Thr Lys Lys Pro Val Thr Met Pro  
 180 185 190



Pro Asn His Val Val Glu His Arg Ile Ala Arg Thr Asp Leu Asp Lys  
 195 200 205

Gly Gly Asn Ser Val Gln Leu Thr Glu His Ala Val Ala His Ile Thr  
 210 215 220

Ser Val Val Pro Phe  
 225

<210> 99  
 <211> 238  
 <212> PRT  
 <213> Aequorea macrodactyla

<400> 99

Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Ile Val Pro Val Leu Ile  
 1 5 10 15

Glu Leu Asp Gly Asp Val His Gly His Lys Phe Ser Val Arg Gly Glu  
 20 25 30

Gly Glu Gly Asp Ala Asp Tyr Gly Lys Leu Glu Ile Lys Phe Ile Cys  
 35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe  
 50 55 60

Ser Tyr Gly Ile Gln Cys Phe Ala Arg Tyr Pro Glu His Met Lys Met  
 65 70 75 80

Asn Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Ile Gln Glu Arg  
 85 90 95

Thr Ile Phe Phe Gln Asp Asp Gly Lys Tyr Lys Thr Arg Gly Glu Val  
 100 105 110

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Met  
 115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn  
 130 135 140

Phe Asn Ser His Asn Val Tyr Ile Met Pro Asp Lys Ala Asn Asn Gly

145

150

155

160

Leu Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Gly Gly Gly Val  
165 170 175

Gln Leu Ala Asp His Tyr Gln Thr Asn Val Pro Leu Gly Asp Gly Pro  
180 185 190

Val Leu Ile Pro Ile Asn His Tyr Leu Ser Thr Gln Thr Ala Ile Ser  
195 200 205

Lys Asp Arg Asn Glu Thr Arg Asp His Met Val Phe Leu Glu Phe Phe  
210 215 220

Ser Ala Cys Gly His Thr His Gly Met Asp Glu Leu Tyr Lys  
225 230 235